81006

CRUISE REPORT

WHITEFOOT (WF 81-1)

April 1-6, 1981

David C. Twichell
U.S. Geological Survey
Woods Hole, MA 02543

19 June, 1981

Cruise Report

Vessel: WHITEFOOT, cruise WF 81-1

Area of Operation: Georges Bank

Dates: Depart Woods Hole 1430 (EDT) 1 April, 1981
Arrive Woods Hole 0530 (EDT) 6 April, 1981

Personnel: Roy Campbell, Captain
David Twichell, Chief Scientist, U.S.G.S.
Andrew Eliason, Eliason Data Services
Greg Miller, Eliason Data Services

Equipment: Navigation: Northstar Loran-C
ATNAV acoustic transponder navigation system

Seismics: Klein sidescan sonar
ORE 3.5 kHz echo sounder

Objectives:

The WHITEFOOT 81-1 cruise was the final of three cruises that were conducted to evaluate sandwave migration rates in a small area (about 1.5 x 2.0 km) on Georges Bank. During this cruise two of the three transponders which were deployed on the WF 80-2 and WF 80-3 cruises were enabled. The third one could not be enabled, so one transponder was deployed. The three transponders were surveyed in to establish the navigation grid, and then the survey was conducted using sidescan sonar and 3.5 kHz echo sounding techniques. After completing the survey, the three transponders used for the survey were recovered, and the transponder which could not be enabled was lost. In addition to the detailed survey, some widely spaced lines were run to obtain an understanding of the setting of the study area.

Narrative:

1 April,	1430 (EDT)	Depart Woods Hole
2 April,	2230 (EDT)	Arrive at survey area on Georges Bank
	2325	Deploy sidescan and 3.5 kHz systems to conduct regional survey around the detailed study area
3 April,	0735	Break regional survey to start detailed survey
	0904	Enable transponders 6022 and 6024
	0928	Deploy transponder 7004 and survey in transponder net
	1503	Sidescan and 3.5 kHz systems deployed and tuned

	1519	Start detailed bathymetry and sidescan survey
4 April	0306	End detailed survey; haul seismic gear
	0745	Deploy seismic gear, continue with regional survey
	1400	End regional survey, haul seismic gear
	1430	Start recovering transponders
5 April	1400	Finish recovering transponders, depart for Woods Hole
6 April	0530	Arrive Woods Hole

Tabulated Information:

a. Days at sea: 6

b. Instrument deployed:

Instrument	Latitude	Longitude
Transponder 7004	41°08.60N	68°02.00W

c. Instruments recovered:

Instrument	Latitude	Longitude
Transponder 6024	41°09.00N	68°02.66W
Transponder 6022	41°08.63N	68°02.40W
Transponder 7004	41°08.60N	68°02.00W

d. Seismic Survey:

Equipment	Time	Latitude	Longitude
Deploy 3.5 kHz and sidescan	2325 2 April	41°02.43	67°53.71
Recover " " " "	0850 3 April	41°08.58	68°01.82
Deploy " " " "	1503 3 April	41°07.92	68°02.42
Recover " " " "	0306 4 April	41°08.20	68°01.40
Deploy " " " "	0745 4 April	41°15.14	68°04.19
Recover " " " "	1400 4 April	41°08.53	68°01.77

e. Amount of seismic data collected:

System	Time spent	km of data collected
3.5	27 hours 40 minutes	199
sidescan	27 hours 40 minutes	199

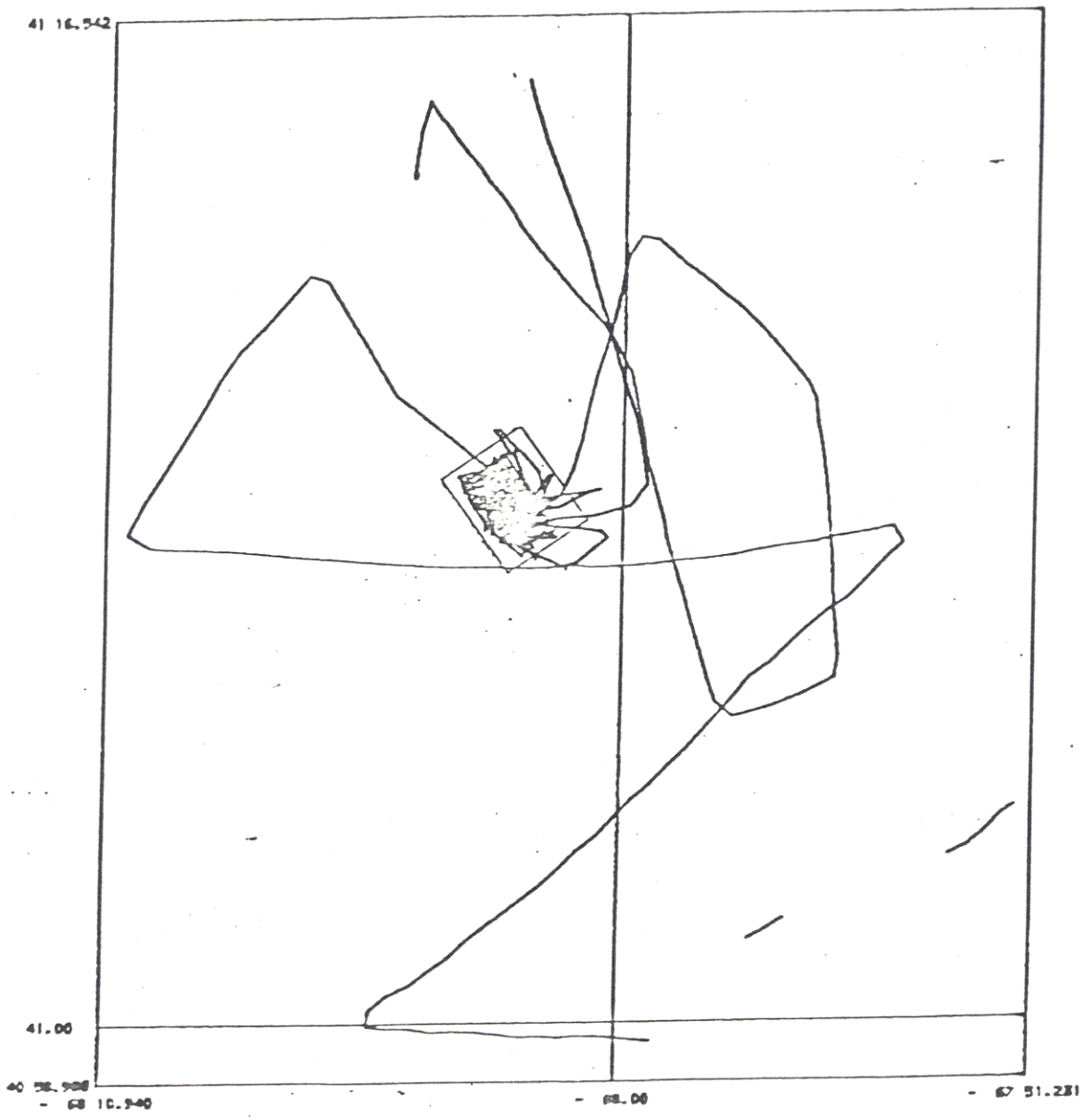
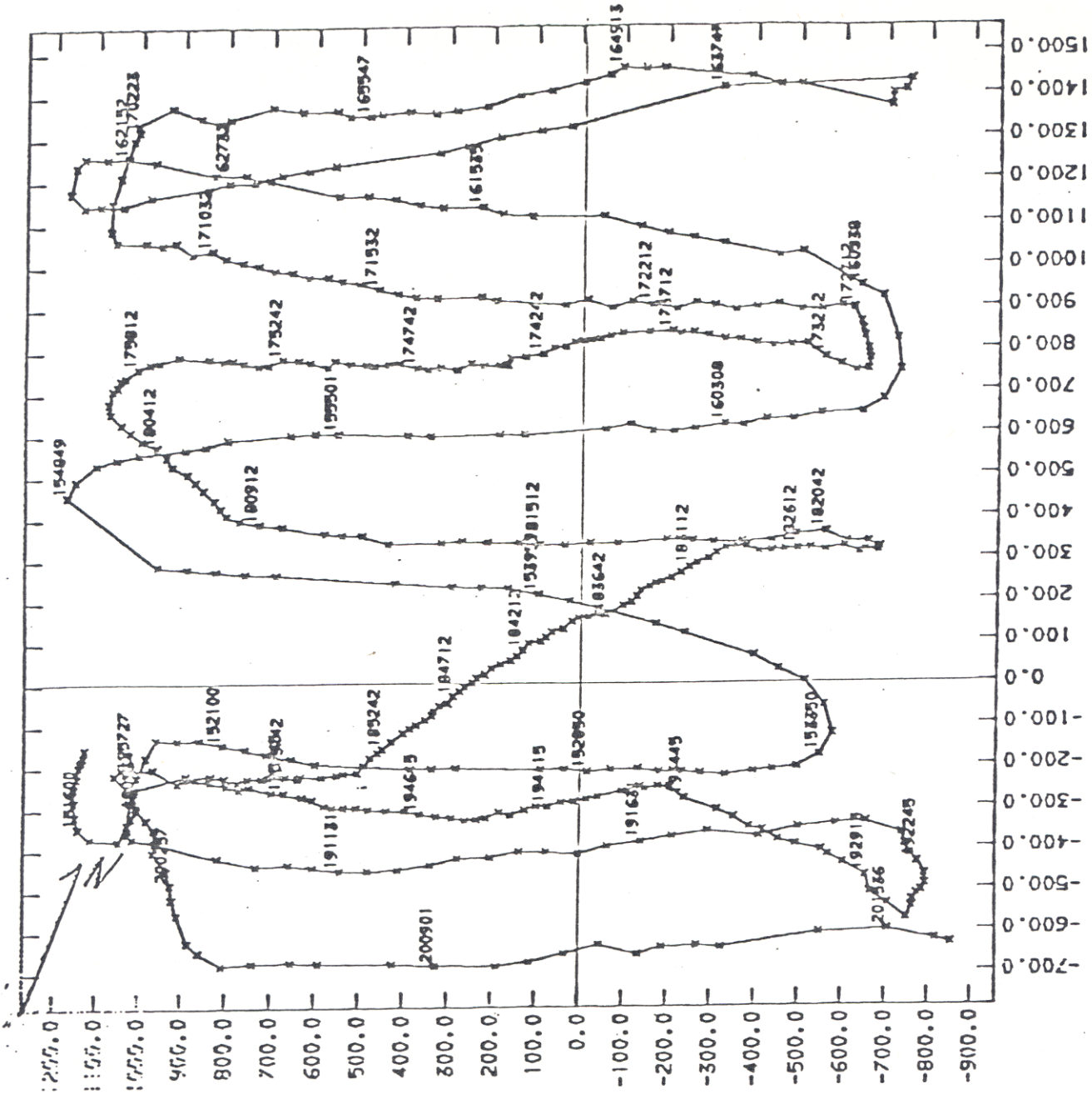


Figure 1. WHITEFOOT 81-1 TRACKLINES
2230 EDT 2 April 1981 - 1400 EDT 4 April 1981.
Navigation by Loran-C. Navigation in the inset is shown in figures 2 and 3.



Fiugre 2. WHITEFOOT 81-1 ACOUSTIC TRANSPONDER NAVIGATION
1510 - 2017 EDT 3 April 1981.
Lines run approximately E.-W. Grid around the border is in 100 m increments, origin is approximately at 40°08.63'N., 68°02.40'W., and north is shown by arrow in lower left corner of figure.

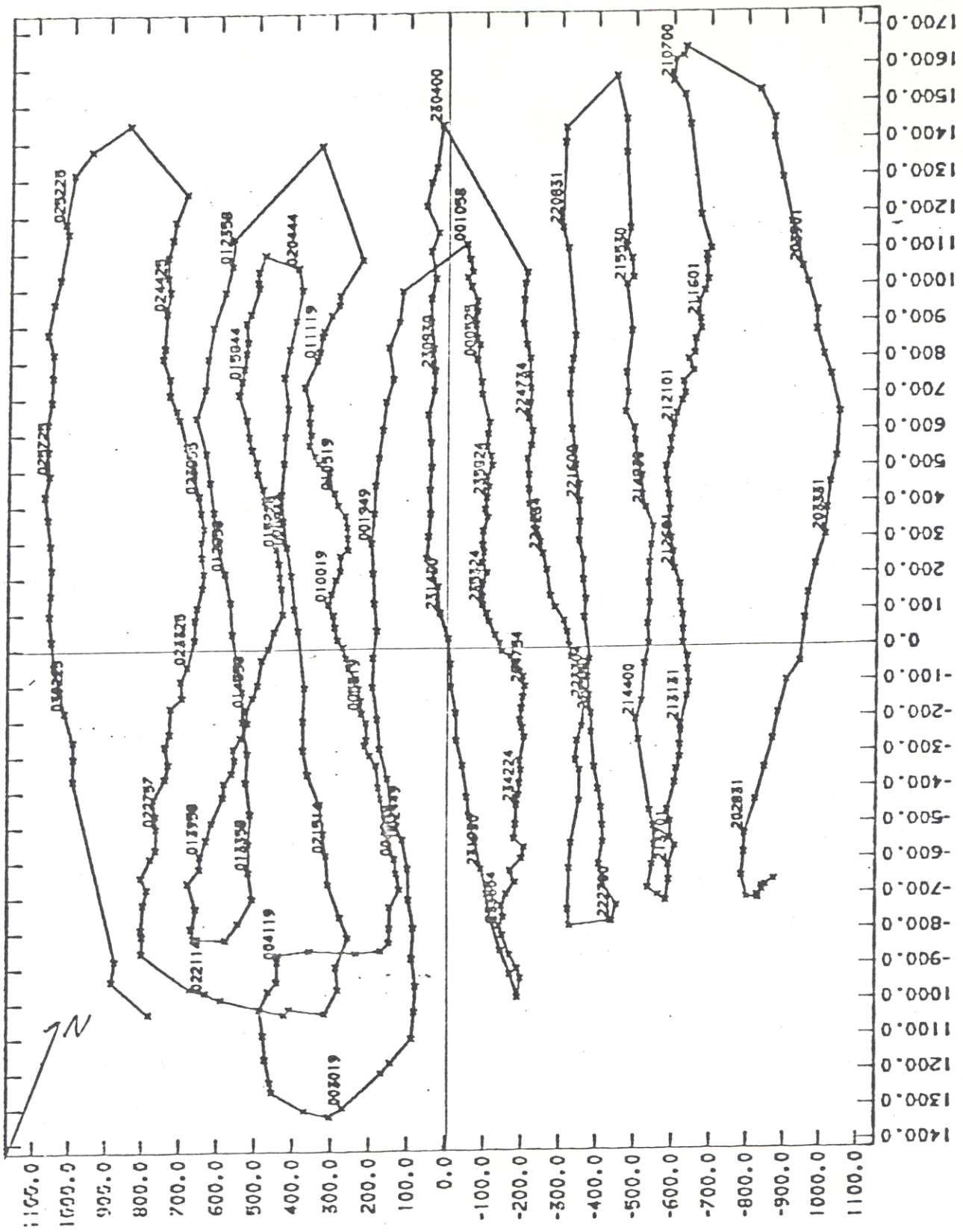


Figure 3. WHITEFOOT 81-1 ACOUSTIC TRANSPONDER NAVIGATION
2025 EDT 3 April 1981 - 0306 EDT 4 April 1981.
Lines run approximately N.-S. Grid around border is in 100 m increments, origin is approximately at 41°08.63'N., 68°02.40'W., and north is shown in lower left corner of figure.